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Szymanska, Grazyna

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T Cells and Methods of Their Use

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Ala	Pro	Arg	Glu														
		355															

<210> 5
 <211> 2574
 <212> DNA
 <213> Homo sapiens

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 ggcaaaatgg ttctttcgac gcccacaatg aaaggcccta ttccctgaag atccgaaaca 600
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 cccttccctt cttgggtttcc aaaggcatct attgctgagt tatatgttca ctgtccccct 2280

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aatattaggg agtaaaacgg ataccaagtt gatttagtgt ttttacctct gtcttggtt 2340
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taatctgtac aacgaacccc catgatgtaa gtttacctat gtaacaaacc tgcacttata 2520
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<210> 6
 <211> 205
 <212> PRT
 <213> Homo sapiens

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<400> 6
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 20          25          30
Leu Pro Cys Thr Ala Pro Trp Asp Pro Gln Val Pro Tyr Thr Val Ser
 35          40          45
Trp Val Lys Leu Leu Glu Gly Gly Glu Glu Arg Met Glu Thr Pro Gln
 50          55          60
Glu Asp His Leu Arg Gly Gln His Tyr His Gln Lys Gly Gln Asn Gly
 65          70          75          80
Ser Phe Asp Ala Pro Asn Glu Arg Pro Tyr Ser Leu Lys Ile Arg Asn
 85          90          95
Thr Thr Ser Cys Asn Ser Gly Thr Tyr Arg Cys Thr Leu Gln Asp Pro
100          105          110
Asp Gly Gln Arg Asn Leu Ser Gly Lys Val Ile Leu Arg Val Thr Gly
115          120          125
Cys Pro Ala Gln Arg Lys Glu Glu Thr Phe Lys Lys Tyr Arg Ala Glu
130          135          140
Ile Val Leu Leu Leu Ala Leu Val Ile Phe Tyr Leu Thr Leu Ile Ile
145          150          155          160
Phe Thr Cys Lys Phe Ala Arg Leu Gln Ser Ile Phe Pro Asp Phe Ser
165          170          175
Lys Ala Gly Met Glu Arg Ala Phe Leu Pro Val Thr Ser Pro Asn Lys
180          185          190
His Leu Gly Leu Val Thr Pro His Lys Thr Glu Leu Val
195          200          205

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<210> 7
 <211> 1067
 <212> DNA
 <213> Homo sapiens

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<400> 7
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gaagcagctg gaaaagactc agaaatcttc acagtgaatg ggattctggg agagtcagtc 180
actttccctg taaatatcca agaaccacgg caagttaaaa tcattgcttg gacttctaaa 240
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cacagaaatt attatgaacg gatacatgcc ttagggtccg actacaatct ggtcattagc 360
gatctgagga tggaagacgc aggagactac aaagcagaca taaatacaca ggctgatccc 420
tacaccacca ccaagcgcta caacctgcaa atctatcgtc ggcttgggaa accaaaaatt 480
acacagagtt taatggcatt tgtgaacagc acctgtaatg tcacactgac atgctctgta 540
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cttcaaattct tccagactcc tgaggaccaa gagctgactt acacgtgtac agcccagaac 660
cctgtcagca acaattctga ctccatctct gcccggcagc tctgtgcaga catcgcaatg 720
ggcttccgta ctaccacac cgggttgctg agcgtgctgg ctatgttctt tctgcttggt 780
ctcattctgt cttcagtgtt tttgttccgt ttgttcaaga gaagacaaga tgctgcctca 840
aagaaaacca tatacacata tatcatggct tcaaggaaca cccagccagc agagtcacga 900

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atctatgatg aaatcctgca gtccaaggtg cttccctcca aggaagagcc agtgaacaca 960
 gtttattccg aagtgcagtt tgctgataag atgggggaaag ccagcacaca ggacagtaaa 1020
 cctcctggga cttcaagcta tgaaattgtg atctaggctg ctgggct 1067

<210> 8
 <211> 328
 <212> PRT
 <213> Homo sapiens

<400> 8
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 Leu Gly Glu Ser Val Thr Phe Pro Val Asn Ile Gln Glu Pro Arg Gln
 35 40 45
 Val Lys Ile Ile Ala Trp Thr Ser Lys Thr Ser Val Ala Tyr Val Thr
 50 55 60
 Pro Gly Asp Ser Glu Thr Ala Pro Val Val Thr Val Thr His Arg Asn
 65 70 75 80
 Tyr Tyr Glu Arg Ile His Ala Leu Gly Pro Asn Tyr Asn Leu Val Ile
 85 90 95
 Ser Asp Leu Arg Met Glu Asp Ala Gly Asp Tyr Lys Ala Asp Ile Asn
 100 105 110
 Thr Gln Ala Asp Pro Tyr Thr Thr Lys Arg Tyr Asn Leu Gln Ile
 115 120 125
 Tyr Arg Arg Leu Gly Lys Pro Lys Ile Thr Gln Ser Leu Met Ala Ser
 130 135 140
 Val Asn Ser Thr Cys Asn Val Thr Leu Thr Cys Ser Val Glu Lys Glu
 145 150 155 160
 Glu Lys Asn Val Thr Tyr Asn Trp Ser Pro Leu Gly Glu Glu Gly Asn
 165 170 175
 Val Leu Gln Ile Phe Gln Thr Pro Glu Asp Gln Glu Leu Thr Tyr Thr
 180 185 190
 Cys Thr Ala Gln Asn Pro Val Ser Asn Asn Ser Asp Ser Ile Ser Ala
 195 200 205
 Arg Gln Leu Cys Ala Asp Ile Ala Met Gly Phe Arg Thr His His Thr
 210 215 220
 Gly Leu Leu Ser Val Leu Ala Met Phe Phe Leu Leu Val Leu Ile Leu
 225 230 235 240
 Ser Ser Val Phe Leu Phe Arg Leu Phe Lys Arg Arg Gln Asp Ala Ala
 245 250 255
 Ser Lys Lys Thr Ile Tyr Thr Tyr Ile Met Ala Ser Arg Asn Thr Gln
 260 265 270
 Pro Ala Glu Ser Arg Ile Tyr Asp Glu Ile Leu Gln Ser Lys Val Leu
 275 280 285
 Pro Ser Lys Glu Glu Pro Val Asn Thr Val Tyr Ser Glu Val Gln Phe
 290 295 300
 Ala Asp Lys Met Gly Lys Ala Ser Thr Gln Asp Ser Lys Pro Pro Gly
 305 310 315 320
 Thr Ser Ser Tyr Glu Ile Val Ile
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<210> 9
 <211> 1561
 <212> DNA
 <213> Homo sapiens

<400> 9
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gaggccgtgt cagcacgatg gaccccaaac agaccaccct cctgtgtctt ggggactttc 240
ccatgccttt catatctgcc aaatcgagtc ctgtgattcc cttggatgga tctgtgaaaa 300
tccagtgccg ggccattcgt gaagcttacc tgaccagct gatgatcata aaaaactcca 360
cgtaccgaga gataggcaga agactgaagt tttggaatga gactgacct gagttcgtca 420
ttgaccacat ggacgcaaac aaggcagggc gctatcagtg ccaatatagg atagggcact 480
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cacagcacca aagtggggaa caccggccaa acttctcttt gggctctgtg gacctcaatg 720
tctcagggat ctacagactc catccaccaa gattacacga cgcagaactt gatccgcatg 780
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<210> 10
<211> 209
<212> PRT
<213> Homo sapiens

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20        25        30
Val Lys Ile Gln Cys Gln Ala Ile Arg Glu Ala Tyr Leu Thr Gln Leu
35        40        45
Met Ile Ile Lys Asn Ser Thr Tyr Arg Glu Ile Gly Arg Arg Leu Lys
50        55        60
Phe Trp Asn Glu Thr Asp Pro Glu Phe Val Ile Asp His Met Asp Ala
65        70        75        80
Asn Lys Ala Gly Arg Tyr Gln Cys Gln Tyr Arg Ile Gly His Tyr Arg
85        90        95
Phe Arg Tyr Ser Asp Thr Leu Glu Leu Val Val Thr Gly Leu Tyr Gly
100       105       110
Lys Pro Phe Leu Ser Ala Asp Arg Gly Leu Val Leu Met Pro Gly Glu
115       120       125
Asn Ile Ser Leu Thr Cys Ser Ser Ala His Ile Pro Phe Asp Arg Phe
130       135       140
Ser Leu Ala Lys Glu Gly Glu Leu Ser Leu Pro Gln His Gln Ser Gly
145       150       155       160
Glu His Pro Ala Asn Phe Ser Leu Gly Pro Val Asp Leu Asn Val Ser
165       170       175
Gly Ile Tyr Arg Leu His Pro Pro Arg Leu His Asp Ala Glu Leu Asp
180       185       190
Pro His Gly Arg Gly Arg Thr Gly Pro Arg Gly Ser Leu Gly His Thr
195       200       205
Gly

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<210> 11
 <211> 2202
 <212> DNA
 <213> Homo sapiens

<400> 11
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<210> 12
 <211> 478
 <212> PRT
 <213> Homo sapiens

<400> 12
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 20 25 30
 Ala Leu Leu Arg Leu Ser Asp Tyr Leu Leu Thr Asn Tyr Arg Lys Gly
 35 40 45
 Val Arg Pro Val Arg Asp Trp Arg Lys Pro Thr Thr Val Ser Ile Asp
 50 55 60
 Val Ile Val Tyr Ala Ile Leu Asn Val Asp Glu Lys Asn Gln Val Leu

65					70					75				80
Thr	Thr	Tyr	Ile	Trp	Tyr	Arg	Gln	Tyr	Trp	Thr	Asp	Glu	Phe	Leu
				85					90					95
Trp	Asn	Pro	Glu	Asp	Phe	Asp	Asn	Ile	Thr	Lys	Leu	Ser	Ile	Pro
			100					105					110	
Asp	Ser	Ile	Trp	Val	Pro	Asp	Ile	Leu	Ile	Asn	Glu	Phe	Val	Asp
		115					120					125		
Gly	Lys	Ser	Pro	Asn	Ile	Pro	Tyr	Val	Tyr	Ile	Arg	His	Gln	Gly
	130					135					140			
Val	Gln	Asn	Tyr	Lys	Pro	Leu	Gln	Val	Val	Thr	Ala	Cys	Ser	Leu
145					150					155				160
Ile	Tyr	Asn	Phe	Pro	Phe	Asp	Val	Gln	Asn	Cys	Ser	Leu	Thr	Phe
				165					170					175
Ser	Trp	Leu	His	Thr	Ile	Gln	Asp	Ile	Asn	Ile	Ser	Leu	Trp	Arg
			180					185					190	
Pro	Glu	Lys	Val	Lys	Ser	Asp	Arg	Ser	Val	Phe	Met	Asn	Gln	Gly
		195					200					205		
Trp	Glu	Leu	Leu	Gly	Val	Leu	Pro	Tyr	Phe	Arg	Glu	Phe	Ser	Met
	210					215					220			
Ser	Ser	Asn	Tyr	Tyr	Ala	Glu	Met	Lys	Phe	Tyr	Val	Val	Ile	Arg
225					230					235				240
Arg	Pro	Leu	Phe	Tyr	Val	Val	Ser	Leu	Leu	Leu	Pro	Ser	Ile	Phe
				245					250					255
Met	Val	Met	Asp	Ile	Val	Gly	Phe	Tyr	Leu	Pro	Pro	Asn	Ser	Gly
			260					265					270	
Arg	Val	Ser	Phe	Lys	Ile	Thr	Leu	Leu	Gly	Tyr	Ser	Val	Phe	Leu
		275					280				285			
Ile	Ile	Val	Ser	Asp	Thr	Leu	Pro	Ala	Thr	Ala	Ile	Gly	Thr	Pro
	290					295					300			
Ile	Gly	Val	Tyr	Phe	Val	Val	Cys	Met	Ala	Leu	Leu	Val	Ile	Ser
305					310					315				320
Ala	Glu	Thr	Ile	Phe	Ile	Val	Arg	Leu	Val	His	Lys	Gln	Asp	Leu
				325					330					335
Gln	Pro	Val	Pro	Ala	Trp	Leu	Arg	His	Leu	Val	Leu	Glu	Arg	Ile
			340					345					350	
Trp	Leu	Leu	Cys	Leu	Arg	Glu	Gln	Ser	Thr	Ser	Gln	Arg	Pro	Pro
		355					360					365		
Thr	Ser	Gln	Ala	Thr	Lys	Thr	Asp	Asp	Cys	Ser	Ala	Met	Gly	Asn
	370					375					380			
Cys	Ser	His	Met	Gly	Gly	Pro	Gln	Asp	Phe	Glu	Lys	Ser	Pro	Arg
385					390					395				400
Arg	Cys	Ser	Pro	Pro	Pro	Pro	Pro	Arg	Glu	Ala	Ser	Leu	Ala	Val
				405					410					415
Gly	Leu	Leu	Gln	Glu	Leu	Ser	Ser	Ile	Arg	Gln	Phe	Leu	Glu	Lys
			420					425					430	
Asp	Glu	Ile	Arg	Glu	Val	Ala	Arg	Asp	Trp	Leu	Arg	Val	Gly	Ser
		435					440					445		
Leu	Asp	Lys	Leu	Leu	Phe	His	Ile	Tyr	Leu	Leu	Ala	Val	Leu	Ala
	450					455					460			
Ser	Ile	Thr	Leu	Val	Met	Leu	Trp	Ser	Ile	Trp	Gln	Tyr	Ala	
465					470					475				

<210> 13

<211> 1425

<212> DNA

<213> Homo sapiens

<400> 13

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<210> 14
 <211> 181
 <212> PRT
 <213> Homo sapiens

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Ala Ser Gln Glu Gly Thr Arg Leu Asn Leu Ile Cys Thr Val Trp His
  35             40             45
Lys Lys Glu Glu Ala Glu Gly Phe Val Val Phe Leu Cys Lys Asp Arg
  50             55             60
Ser Gly Asp Cys Ser Pro Glu Thr Ser Leu Lys Gln Leu Arg Leu Lys
  65             70             75             80
Arg Asp Pro Gly Ile Asp Gly Val Gly Glu Ile Ser Ser Gln Leu Met
  85             90             95
Phe Thr Ile Ser Gln Val Thr Pro Leu His Ser Gly Thr Tyr Gln Cys
  100            105            110
Cys Ala Arg Ser Gln Lys Ser Gly Ile Arg Leu Gln Gly His Phe Phe
  115            120            125
Ser Ile Leu Phe Thr Glu Thr Gly Asn Tyr Thr Val Thr Gly Leu Lys
  130            135            140
Gln Arg Gln His Leu Glu Phe Ser His Asn Glu Gly Thr Leu Ser Ser
  145            150            155            160
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<210> 15
 <211> 4775
 <212> DNA
 <213> Homo sapiens

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 <211> 458
 <212> PRT
 <213> Homo sapiens

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 35          40          45
Pro Asp Gly Val Gln Asn Trp Pro Ala Leu Ser Ile Val Ile Ile Ile
 50          55          60
Ile Met Thr Ile Gly Gly Asn Ile Leu Val Ile Met Ala Val Ser Met
 65          70          75          80
Glu Lys Lys Leu His Asn Ala Thr Asn Tyr Phe Leu Met Ser Leu Ala
 85          90          95
Ile Ala Asp Met Leu Val Gly Leu Leu Val Met Pro Leu Ser Leu Leu
100          105          110
Ala Ile Leu Tyr Asp Tyr Val Trp Pro Leu Pro Arg Tyr Leu Cys Pro
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Val Trp Ile Ser Leu Asp Val Leu Phe Ser Thr Ala Ser Ile Met His
130          135          140
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145          150          155          160
Glu His Ser Arg Phe Asn Ser Arg Thr Lys Ala Ile Met Lys Ile Ala
165          170          175
Ile Val Trp Ala Ile Ser Ile Gly Val Ser Val Pro Ile Pro Val Ile
180          185          190
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195          200          205
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210          215          220
Ile Pro Leu Thr Ile Met Val Ile Thr Tyr Cys Leu Thr Ile Tyr Val
225          230          235          240
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Cys Glu Lys Ser Cys Asn Gln Lys Leu Met Glu Lys Leu Leu Asn Val		
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Phe Val Trp Ile Gly Tyr Val Cys Ser Gly Ile Asn Pro Leu Val Tyr		
355	360	365
Thr Leu Phe Asn Lys Ile Tyr Arg Arg Ala Phe Ser Asn Tyr Leu Arg		
370	375	380
Cys Asn Tyr Lys Val Glu Lys Lys Pro Pro Val Arg Gln Ile Pro Arg		
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405	410	415
Arg His Thr Asn Glu Pro Val Ile Glu Lys Ala Ser Asp Asn Glu Pro		
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<210> 17
 <211> 1892
 <212> DNA
 <213> Homo sapiens

<400> 17

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<212> PRT
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Leu Gly Asn Leu Val Val Cys Leu Met Val Tyr Gln Lys Ala Ala Met
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<210> 19
<211> 3689
<212> DNA
<213> Homo sapiens

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<210> 20
<211> 390
<212> PRT
<213> Homo sapiens

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35          40          45
Arg Ser Ser Tyr Phe Phe Leu Asn Leu Ala Ile Ser Asp Phe Phe Val
50          55          60
Gly Val Ile Ser Ile Pro Leu Tyr Ile Pro His Thr Leu Phe Glu Trp
65          70          75          80
Asp Phe Gly Lys Glu Ile Cys Val Phe Trp Leu Thr Thr Asp Tyr Leu
85          90          95
Leu Cys Thr Ala Ser Val Tyr Asn Ile Val Leu Ile Ser Tyr Asp Arg
100         105         110
Tyr Leu Ser Val Ser Asn Ala Val Ser Tyr Arg Thr Gln His Thr Gly
115         120         125
Val Leu Lys Ile Val Thr Leu Met Val Ala Val Trp Val Leu Ala Phe
130         135         140
Leu Val Asn Gly Pro Met Ile Leu Val Ser Glu Ser Trp Lys Asp Glu
145         150         155         160
Gly Ser Glu Cys Glu Pro Gly Phe Phe Ser Glu Trp Tyr Ile Leu Ala
165         170         175
Ile Thr Ser Phe Leu Glu Phe Val Ile Pro Val Ile Leu Val Ala Tyr
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Phe Asn Met Asn Ile Tyr Trp Ser Leu Trp Lys Arg Asp His Leu Ser
195         200         205
Arg Cys Gln Ser His Pro Gly Leu Thr Ala Val Ser Ser Asn Ile Cys
210         215         220
Gly His Ser Phe Arg Gly Arg Leu Ser Ser Arg Arg Ser Leu Ser Ala
225         230         235         240
Ser Thr Glu Val Pro Ala Ser Phe His Ser Glu Arg Gln Arg Arg Lys
245         250         255
Ser Ser Leu Met Phe Ser Ser Arg Thr Lys Met Asn Ser Asn Thr Ile
260         265         270
Ala Ser Lys Met Gly Ser Phe Ser Gln Ser Asp Ser Val Ala Leu His
275         280         285
Gln Arg Glu His Val Glu Leu Leu Arg Ala Arg Arg Leu Ala Lys Ser
290         295         300
Leu Ala Ile Leu Leu Gly Val Phe Ala Val Cys Trp Ala Pro Tyr Ser
305         310         315         320
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325         330         335
Ser Val Trp Tyr Arg Ile Ala Phe Trp Leu Gln Trp Phe Asn Ser Phe

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<400> 24

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			20					25					30		
Pro	Lys	Phe	Glu	Ser	Lys	Ala	Ala	Leu	Leu	Ala	Ala	Arg	Gly	Pro	Glu
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Glu	Leu	Leu	Cys	Phe	Thr	Glu	Arg	Leu	Glu	Asp	Leu	Val	Cys	Phe	Trp
	50					55				60					
Glu	Glu	Ala	Ala	Ser	Ala	Gly	Val	Gly	Pro	Gly	Asn	Tyr	Ser	Phe	Ser
65					70					75					80
Tyr	Gln	Leu	Glu	Asp	Glu	Pro	Trp	Lys	Leu	Cys	Arg	Leu	His	Gln	Ala
				85				90						95	
Pro	Thr	Ala	Arg	Gly	Ala	Val	Arg	Phe	Trp	Cys	Ser	Leu	Pro	Thr	Ala
			100					105					110		
Asp	Thr	Ser	Ser	Phe	Val	Pro	Leu	Glu	Leu	Arg	Val	Thr	Ala	Ala	Ser
		115					120					125			
Gly	Ala	Pro	Arg	Tyr	His	Arg	Val	Ile	His	Ile	Asn	Glu	Val	Val	Leu
	130					135					140				
Leu	Asp	Ala	Pro	Val	Gly	Leu	Val	Ala	Arg	Leu	Ala	Asp	Glu	Ser	Gly
145					150					155					160
His	Val	Val	Leu	Arg	Trp	Leu	Pro	Pro	Pro	Glu	Thr	Pro	Met	Thr	Ser
				165				170						175	
His	Ile	Arg	Tyr	Glu	Val	Asp	Val	Ser	Ala	Gly	Asn	Gly	Ala	Gly	Ser
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Val	Gln	Arg	Val	Glu	Ile	Leu	Glu	Gly	Arg	Thr	Glu	Cys	Val	Leu	Ser
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Asn	Leu	Arg	Gly	Arg	Thr	Arg	Tyr	Thr	Phe	Ala	Val	Arg	Ala	Arg	Met
	210				215						220				
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Ser	His	Arg	Arg	Ala	Leu	Lys	Gln	Lys	Ile	Trp	Pro	Gly	Ile	Pro	Ser
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Pro	Glu	Ser	Glu	Phe	Glu	Gly	Leu	Phe	Thr	Thr	His	Lys	Gly	Asn	Phe
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Gln	Leu	Trp	Leu	Tyr	Gln	Asn	Asp	Gly	Cys	Leu	Trp	Trp	Ser	Pro	Cys
305					310					315					320
Thr	Pro	Phe	Thr	Glu	Asp	Pro	Pro	Ala	Ser	Leu	Glu	Val	Leu	Ser	Glu
				325					330					335	
Arg	Cys	Trp	Gly	Thr	Met	Gln	Ala	Val	Glu	Pro	Gly	Thr	Asp	Asp	Glu
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Gly	Pro	Leu	Leu	Glu	Pro	Val	Gly	Ser	Glu	His	Ala	Gln	Asp	Thr	Tyr
		355					360					365			
Leu	Val	Leu	Asp	Lys	Trp	Leu	Leu	Pro	Arg	Asn	Pro	Pro	Ser	Glu	Asp
	370					375					380				
Leu	Pro	Gly	Pro	Gly	Gly	Ser	Val	Asp	Ile	Val	Ala	Met	Asp	Glu	Gly
385					390					395					400
Ser	Glu	Ala	Ser	Ser	Cys	Ser	Ser	Ala	Leu	Ala	Ser	Lys	Pro	Ser	Pro
				405					410					415	
Glu	Gly	Ala	Ser	Ala	Ala	Ser	Phe	Glu	Tyr	Thr	Ile	Leu	Asp	Pro	Ser
			420					425					430		
Ser	Gln	Leu	Leu	Arg	Pro	Trp	Thr	Leu	Cys	Pro	Glu	Leu	Pro	Pro	Thr
		435					440						445		
Pro	Pro	His	Leu	Lys	Tyr	Leu	Tyr	Leu	Val	Val	Ser	Asp	Ser	Gly	Ile
	450					455					460				
Ser	Thr	Asp	Tyr	Ser	Ser	Gly	Asp	Ser	Gln	Gly	Ala	Gln	Gly	Gly	Leu

465		470		475		480
Ser Asp Gly Pro Tyr	Ser Asn Pro Tyr	Glu Asn Ser Leu Ile	Pro Ala			
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Ala Glu Pro Leu Pro Pro Ser Tyr	Val Ala Cys Ser					
500	505					

<210> 25
 <211> 2306
 <212> DNA
 <213> Homo sapiens

<400> 25

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caagtcacga	ttgaagccga	gccaacccaa	gtttccgagg	ggaaggatgt	tcttctactt	300
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<210> 26
 <211> 426
 <212> PRT
 <213> Homo sapiens

<400> 26

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			20					25					30				
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		35					40					45					
Lys	Asp	Val	Leu	Leu	Leu	Val	His	Asn	Leu	Pro	Gln	Asn	Leu	Thr	Gly		
	50					55					60						
Tyr	Ile	Trp	Tyr	Lys	Gly	Gln	Met	Arg	Asp	Leu	Tyr	His	Tyr	Ile	Thr		
65					70					75				80			
Ser	Tyr	Val	Val	Asp	Gly	Glu	Ile	Ile	Ile	Tyr	Gly	Pro	Ala	Tyr	Ser		
				85					90					95			
Gly	Arg	Glu	Thr	Ala	Tyr	Ser	Asn	Ala	Ser	Leu	Leu	Ile	Gln	Asn	Val		
			100					105					110				
Thr	Arg	Glu	Asp	Ala	Gly	Ser	Tyr	Thr	Leu	His	Ile	Ile	Lys	Gly	Asp		
		115					120					125					
Asp	Gly	Thr	Arg	Gly	Val	Thr	Gly	Arg	Phe	Thr	Phe	Thr	Leu	His	Leu		
	130					135					140						
Glu	Thr	Pro	Lys	Pro	Ser	Ile	Ser	Ser	Ser	Asn	Leu	Asn	Pro	Arg	Glu		
145					150					155				160			
Thr	Met	Glu	Ala	Val	Ser	Leu	Thr	Cys	Asp	Pro	Glu	Thr	Pro	Asp	Ala		
			165						170					175			
Ser	Tyr	Leu	Trp	Trp	Met	Asn	Gly	Gln	Ser	Leu	Pro	Met	Thr	His	Ser		
		180						185					190				
Leu	Lys	Leu	Ser	Glu	Thr	Asn	Arg	Thr	Leu	Phe	Leu	Leu	Gly	Val	Thr		
		195				200						205					
Lys	Tyr	Thr	Ala	Gly	Pro	Tyr	Glu	Cys	Glu	Ile	Arg	Asn	Pro	Val	Ser		
	210					215					220						
Ala	Ser	Arg	Ser	Asp	Pro	Val	Thr	Leu	Asn	Leu	Leu	Pro	Lys	Leu	Pro		
225					230					235				240			
Lys	Pro	Tyr	Ile	Thr	Ile	Asn	Asn	Leu	Asn	Pro	Arg	Glu	Asn	Lys	Asp		
			245						250					255			
Val	Leu	Asn	Phe	Thr	Cys	Glu	Pro	Lys	Ser	Glu	Asn	Tyr	Thr	Tyr	Ile		
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Trp	Trp	Leu	Asn	Gly	Gln	Ser	Leu	Pro	Val	Ser	Pro	Arg	Val	Lys	Arg		
		275					280					285					
Pro	Ile	Glu	Asn	Arg	Ile	Leu	Ile	Leu	Pro	Ser	Val	Thr	Arg	Asn	Glu		
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Thr	Gly	Pro	Tyr	Gln	Cys	Glu	Ile	Arg	Asp	Arg	Tyr	Gly	Gly	Ile	Arg		
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			325						330					335			
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Ser	Cys	Ser	Ala	Asp	Ser	Asn	Pro	Pro	Ala	Gln	Tyr	Ser	Trp	Thr	Ile		
		355					360					365					
Asn	Glu	Lys	Phe	Gln	Leu	Pro	Gly	Gln	Lys	Leu	Phe	Ile	Arg	His	Ile		
	370					375					380						
Thr	Thr	Lys	His	Ser	Gly	Leu	Tyr	Val	Cys	Ser	Val	Arg	Asn	Ser	Ala		
385					390					395				400			
Thr	Gly	Lys	Glu	Ser	Ser	Lys	Ser	Met	Thr	Val	Glu	Val	Ser	Gly	Lys		
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Trp	Ile	Pro	Ala	Ser	Leu	Ala	Ile	Gly	Phe								
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<210> 27

<211> 1856

<212> DNA

<213> Homo sapiens

<400> 27

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gcccaagtca cgattgaagc cgagccaacc aaagtttcca aggggaagga cgttcttcta 240
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<210> 28
 <211> 428
 <212> PRT
 <213> Homo sapiens

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<400> 28
Met Gly Pro Leu Ser Ala Pro Pro Cys Thr Gln Arg Ile Thr Trp Lys
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 20          25          30
Thr Ala Gln Val Thr Ile Glu Ala Glu Pro Thr Lys Val Ser Lys Gly
 35          40          45
Lys Asp Val Leu Leu Leu Val His Asn Leu Pro Gln Asn Leu Ala Gly
 50          55          60
Tyr Ile Trp Tyr Lys Gly Gln Met Lys Asp Leu Tyr His Tyr Ile Thr
 65          70          75          80
Ser Tyr Val Val Asp Gly Gln Ile Ile Ile Tyr Gly Pro Ala Tyr Ser
 85          90          95
Gly Arg Glu Thr Val Tyr Ser Asn Ala Ser Leu Leu Ile Gln Asn Val
100          105          110
Thr Arg Glu Asp Ala Gly Ser Tyr Thr Leu His Ile Val Lys Arg Gly
115          120          125
Asp Gly Thr Arg Gly Glu Thr Gly His Phe Thr Phe Thr Leu Tyr Leu
130          135          140
Glu Thr Pro Lys Pro Ser Ile Ser Ser Ser Asn Leu Tyr Pro Arg Glu
145          150          155          160
Asp Met Glu Ala Val Ser Leu Thr Cys Asp Pro Glu Thr Pro Asp Ala
165          170          175
Ser Tyr Leu Trp Trp Met Asn Gly Gln Ser Leu Pro Met Thr His Ser
180          185          190

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Leu	Gln	Leu	Ser	Lys	Asn	Lys	Arg	Thr	Leu	Phe	Leu	Phe	Gly	Val	Thr
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Lys	Tyr	Thr	Ala	Gly	Pro	Tyr	Glu	Cys	Glu	Ile	Arg	Asn	Pro	Val	Ser
	210					215					220				
Ala	Ser	Arg	Ser	Asp	Pro	Val	Thr	Leu	Asn	Leu	Leu	Pro	Lys	Leu	Pro
	225				230					235					240
Lys	Pro	Tyr	Ile	Thr	Ile	Asn	Asn	Leu	Asn	Pro	Arg	Glu	Asn	Lys	Asp
			245						250					255	
Val	Leu	Ala	Phe	Thr	Cys	Glu	Pro	Lys	Ser	Glu	Asn	Tyr	Thr	Tyr	Ile
		260						265					270		
Trp	Trp	Leu	Asn	Gly	Gln	Ser	Leu	Pro	Val	Ser	Pro	Arg	Val	Lys	Arg
	275						280					285			
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	290				295						300				
Thr	Gly	Pro	Tyr	Gln	Cys	Glu	Ile	Gln	Asp	Arg	Tyr	Gly	Gly	Ile	Arg
	305			310					315						320
Ser	Tyr	Pro	Val	Thr	Leu	Asn	Val	Leu	Tyr	Gly	Pro	Asp	Leu	Pro	Arg
			325						330					335	
Ile	Tyr	Pro	Ser	Phe	Thr	Tyr	Tyr	His	Ser	Gly	Glu	Asn	Leu	Tyr	Leu
		340						345					350		
Ser	Cys	Phe	Ala	Asp	Ser	Asn	Pro	Pro	Ala	Glu	Tyr	Ser	Trp	Thr	Ile
	355					360						365			
Asn	Gly	Lys	Phe	Gln	Leu	Ser	Gly	Gln	Lys	Leu	Phe	Ile	Pro	Gln	Ile
	370				375						380				
Thr	Thr	Lys	His	Ser	Gly	Leu	Tyr	Ala	Cys	Ser	Val	Arg	Asn	Ser	Ala
	385				390					395					400
Thr	Gly	Met	Glu	Ser	Ser	Lys	Ser	Met	Thr	Val	Lys	Val	Ser	Ala	Pro
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 <212> DNA
 <213> Homo sapiens

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1409

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 <211> 435
 <212> PRT
 <213> Homo sapiens

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 Thr Ala Gln Val Ile Ile Glu Ala Lys Pro Pro Lys Val Ser Glu Gly
 35 40 45
 Lys Asp Val Leu Leu Leu Val His Asn Leu Pro Gln Asn Leu Thr Gly
 50 55 60
 Tyr Ile Trp Tyr Lys Gly Gln Met Thr Asp Leu Tyr His Tyr Ile Thr
 65 70 75 80
 Ser Tyr Val Val His Gly Gln Ile Ile Tyr Gly Pro Ala Tyr Ser Gly
 85 90 95
 Arg Glu Thr Val Tyr Ser Asn Ala Ser Leu Leu Ile Gln Asn Val Thr
 100 105 110
 Gln Glu Asp Ala Gly Ser Tyr Thr Leu His Ile Ile Lys Arg Gly Asp
 115 120 125
 Gly Thr Gly Gly Val Thr Gly Tyr Phe Thr Val Thr Leu Tyr Ser Glu
 130 135 140
 Thr Pro Lys Pro Ser Ile Ser Ser Ser Asn Leu Asn Pro Arg Glu Val
 145 150 155 160
 Met Glu Ala Val Arg Leu Ile Cys Asp Pro Glu Thr Pro Asp Ala Ser
 165 170 175
 Tyr Leu Trp Leu Leu Asn Gly Gln Asn Leu Pro Met Thr His Arg Leu
 180 185 190
 Gln Leu Ser Lys Thr Asn Arg Thr Leu Tyr Leu Phe Gly Val Thr Lys
 195 200 205
 Tyr Ile Ala Gly Pro Tyr Glu Cys Glu Ile Arg Asn Pro Val Ser Ala
 210 215 220
 Ser Arg Ser Asp Pro Val Thr Leu Asn Leu Leu Pro Lys Leu Pro Met
 225 230 235 240
 Pro Tyr Ile Thr Ile Asn Asn Leu Asn Pro Arg Glu Lys Lys Asp Val
 245 250 255
 Leu Ala Phe Thr Cys Glu Pro Lys Ser Arg Asn Tyr Thr Tyr Ile Trp
 260 265 270
 Trp Leu Asn Gly Gln Ser Leu Pro Val Ser Pro Arg Val Lys Arg Pro
 275 280 285
 Ile Glu Asn Arg Ile Leu Ile Leu Pro Ser Val Thr Arg Asn Glu Thr
 290 295 300
 Gly Pro Tyr Gln Cys Glu Ile Arg Asp Arg Tyr Gly Gly Ile Arg Ser
 305 310 315 320
 Asn Pro Val Thr Leu Asn Val Leu Tyr Gly Pro Asp Leu Pro Arg Ile
 325 330 335
 Tyr Pro Ser Phe Thr Tyr Tyr Arg Ser Gly Glu Asn Leu Asp Leu Ser
 340 345 350
 Cys Phe Ala Asp Ser Asn Pro Pro Ala Glu Tyr Ser Trp Thr Ile Asn
 355 360 365
 Gly Lys Phe Gln Leu Ser Gly Gln Lys Leu Phe Ile Pro Gln Ile Thr
 370 375 380
 Thr Asn His Ser Gly Leu Tyr Ala Cys Ser Val Arg Asn Ser Ala Thr
 385 390 395 400
 Gly Lys Glu Ile Ser Lys Ser Met Ile Val Lys Val Ser Glu Thr Ala
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435

425

430

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<212> PRT
<213> Homo sapiens

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35 40 45
Lys Asp Val Leu Leu Leu Val His Asn Leu Pro Gln Asn Leu Pro Gly
50 55 60
Tyr Phe Trp Tyr Lys Gly Glu Met Thr Asp Leu Tyr His Tyr Ile Ile
65 70 75 80
Ser Tyr Ile Val Asp Gly Lys Ile Ile Ile Tyr Gly Pro Ala Tyr Ser
85 90 95
Gly Arg Glu Thr Val Tyr Ser Asn Ala Ser Leu Leu Ile Gln Asn Val
100 105 110

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Asp	Glu	Thr	Arg	Glu	Glu	Ile	Arg	His	Phe	Thr	Phe	Thr	Leu	Tyr	Leu	
	130					135					140					
Glu	Thr	Pro	Lys	Pro	Tyr	Ile	Ser	Ser	Ser	Asn	Leu	Asn	Pro	Arg	Glu	
145					150					155					160	
Ala	Met	Glu	Ala	Val	Arg	Leu	Ile	Cys	Asp	Pro	Glu	Thr	Leu	Asp	Ala	
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Ser	Tyr	Leu	Trp	Trp	Met	Asn	Gly	Gln	Ser	Leu	Pro	Val	Thr	His	Arg	
		180						185					190			
Leu	Gln	Leu	Ser	Lys	Thr	Asn	Arg	Thr	Leu	Tyr	Leu	Phe	Gly	Val	Thr	
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Lys	Tyr	Ile	Ala	Gly	Pro	Tyr	Glu	Cys	Glu	Ile	Arg	Asn	Pro	Val	Ser	
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Ala	Ser	Arg	Ser	Asp	Pro	Val	Thr	Leu	Asn	Leu	Leu	Pro	Lys	Leu	Pro	
225					230					235					240	
Ile	Pro	Tyr	Ile	Thr	Ile	Asn	Asn	Leu	Asn	Pro	Arg	Glu	Asn	Lys	Asp	
			245					250						255		
Val	Leu	Ala	Phe	Thr	Cys	Glu	Pro	Lys	Ser	Glu	Asn	Tyr	Thr	Tyr	Ile	
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Trp	Trp	Leu	Asn	Gly	Gln	Ser	Leu	Pro	Val	Ser	Pro	Gly	Val	Lys	Arg	
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Pro	Ile	Glu	Asn	Arg	Ile	Leu	Ile	Leu	Pro	Ser	Val	Thr	Arg	Asn	Glu	
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Thr	Gly	Pro	Tyr	Gln	Cys	Glu	Ile	Gln	Asp	Arg	Tyr	Gly	Gly	Leu	Arg	
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Ser	Asn	Pro	Val	Ile	Leu	Asn	Val	Leu	Tyr	Gly	Pro	Asp	Leu	Pro	Arg	
			325					330						335		
Ile	Tyr	Pro	Ser	Phe	Thr	Tyr	Tyr	Arg	Ser	Gly	Glu	Asn	Leu	Asp	Leu	
		340						345					350			
Ser	Cys	Phe	Thr	Glu	Ser	Asn	Pro	Pro	Ala	Glu	Tyr	Phe	Trp	Thr	Ile	
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Asn	Gly	Lys	Phe	Gln	Gln	Ser	Gly	Gln	Lys	Leu	Phe	Ile	Pro	Gln	Ile	
	370				375						380					
Thr	Arg	Asn	His	Ser	Gly	Leu	Tyr	Ala	Cys	Ser	Val	His	Asn	Ser	Ala	
385					390				395						400	
Thr	Gly	Lys	Glu	Ile	Ser	Lys	Ser	Met	Thr	Val	Lys	Val	Ser	Gly	Pro	
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Cys	His	Gly	Asp	Leu	Thr	Glu	Ser	Gln	Ser							
		420						425								

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 <213> Homo sapiens

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Ile	Trp	Glu	Ala	Ala	Gln	Phe	Thr	Val	Leu	Ser	Lys	Leu	Arg	Thr	Pro	915	920	925
Leu	Gly	Arg	Ala	Gln	Asp	Thr	Phe	Gln	Thr	Ile	Glu	Gly	Ile	Ile	Arg	930	935	940
Ser	Leu	Ala	Ala	His	Thr	Leu	Asn	Pro	Asp	Gln	Asp	Val	Ser	Gln	Trp	945	950	955
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Arg	Ile	Arg	Leu	Ser	Ile	Met	Arg	Val	Gly	Leu	Leu	Ala	Gly	Gln	Pro	1025	1030	1035
Ala	Val	Thr	Val	Arg	His	Gly	Phe	Asp	Leu	Leu	Thr	Glu	Met	Lys	Thr	1045	1050	1055
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Ser	Val	Ala	Gln	Gln	Ala	Glu	Gly	Arg	Phe	Glu	Lys	Ala	Ser	Val	Glu	1105	1110	1115
Tyr	Gln	Glu	His	Leu	Cys	Ala	Met	Thr	Gly	Val	Asp	Cys	Cys	Ile	Ser	1125	1130	1135
Ser	Phe	Asp	Lys	Ser	Val	Leu	Thr	Leu	Ala	Asn	Ala	Gly	Arg	Asn	Ser	1140	1145	1150
Ala	Ser	Pro	Lys	His	Ser	Leu	Asn	Gly	Glu	Ser	Arg	Lys	Thr	Val	Leu	1155	1160	1165
Ser	Lys	Pro	Thr	Asp	Ser	Ser	Pro	Glu	Val	Ile	Asn	Tyr	Leu	Gly	Asn	1170	1175	1180
Lys	Ala	Cys	Glu	Cys	Tyr	Ile	Ser	Ile	Ala	Asp	Trp	Ala	Ala	Val	Gln	1185	1190	1195
Glu	Trp	Gln	Asn	Ala	Ile	His	Asp	Leu	Lys	Lys	Ser	Thr	Ser	Ser	Thr			1200

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Ser Leu Asn	Leu Lys Ala Asp Phe Asn Tyr Ile Lys Ser	Leu Ser Ser			
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Pro Gly Glu	Asn Ile Asn Leu Leu Ala Gly Gly Ser Lys Glu Lys Ile				
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Asp Met Lys	Lys Leu Leu Pro Asn Met Leu Ser Pro Asp Pro Arg Glu				
1265		1270		1275	1280
Leu Gln Lys	Ser Ile Glu Val Gln Leu Leu Arg Ser Ser Val Cys Leu				
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Ala Thr Ala	Leu Asn Pro Ile Glu Gln Asp Gln Lys Trp Gln Ser Ile				
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Thr Glu Asn	Val Val Lys Tyr Leu Lys Gln Thr Ser Arg Ile Ala Ile				
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Gly Pro Leu	Arg Leu Ser Thr Leu Thr Val Ser Gln Ser Leu Pro Val				
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Ser Asn Arg	Leu Ser Thr Glu Asp Cys Leu Ile Pro Leu Phe Ser Glu				
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Ala Leu Arg	Ser Cys Lys Gln His Asp Val Arg Pro Trp Met Gln Ala				
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Leu Arg Tyr	Thr Met Tyr Gln Asn Gln Leu Leu Glu Lys Ile Lys Glu				
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Gln Thr Val	Pro Ile Arg Ser His Leu Met Glu Leu Gly Leu Thr Ala				
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Ala Lys Phe	Ala Arg Lys Arg Gly Asn Val Ser Leu Ala Thr Arg Leu				
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Leu Ala Gln	Cys Ser Glu Val Gln Leu Gly Lys Thr Thr Thr Ala Gln				
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Asp Leu Val	Gln His Phe Lys Lys Leu Ser Thr Gln Gly Gln Val Asp				
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Ile Ser Phe	Cys Lys Ser Val Lys Ala Glu Tyr Ala Val Ala Lys Ser				
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Trp	Arg	Lys	Val	Val	Asp	Arg	Ile	Phe	Ser	Leu	Tyr	Lys	Leu	Ser	Cys	1730	1735	1740
Ser	Ala	Tyr	Phe	Thr	Phe	Leu	Lys	Leu	Asn	Ala	Gly	Gln	Ile	Pro	Leu	1745	1750	1755
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Ile	Met	Arg	Glu	Lys	His	Thr	Ala	Leu	Met	Lys	Pro	Ile	Val	Phe	Ala	2005	2010	2015
Leu	Glu	His	Val	Arg	Ser	Ile	Thr	Ala	Ala	Pro	Ala	Glu	Thr	Pro	His	2020	2025	2030
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<212> PRT
<213> Homo sapiens

<400> 36
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Met Thr Ser Pro Gly Ser Gly Leu Ile Leu Gln Ala Asn Phe Val His
35 40 45
Ser Gln Arg Arg Glu Ser Phe Leu Tyr Arg Ser Asp Ser Asp Tyr Asp
50 55 60
Leu Ser Pro Lys Ser Met Ser Arg Asn Ser Ser Ile Ala Ser Asp Ile
65 70 75 80
His Gly Asp Asp Leu Ile Val Thr Pro Phe Ala Gln Val Leu Ala Ser
85 90 95
Leu Arg Thr Val Arg Asn Asn Phe Ala Ala Leu Thr Asn Leu Gln Asp
100 105 110
Arg Ala Pro Ser Lys Arg Ser Pro Met Cys Asn Gln Pro Ser Ile Asn
115 120 125
Lys Ala Thr Ile Thr Glu Glu Ala Tyr Gln Lys Leu Ala Ser Glu Thr
130 135 140
Leu Glu Glu Leu Asp Trp Cys Leu Asp Gln Leu Glu Thr Leu Gln Thr
145 150 155 160
Arg His Ser Val Ser Glu Met Ala Ser Asn Lys Phe Lys Arg Met Leu
165 170 175
Asn Arg Glu Leu Thr His Leu Ser Glu Met Ser Arg Ser Gly Asn Gln
180 185 190
Val Ser Glu Phe Ile Ser Asn Thr Phe Leu Asp Lys Gln His Glu Val
195 200 205
Glu Ile Pro Ser Pro Thr Gln Lys Glu Lys Glu Lys Lys Lys Arg Pro
210 215 220
Met Ser Gln Ile Ser Gly Val Lys Lys Leu Met His Ser Ser Ser Leu
225 230 235 240
Thr Asn Ser Ser Ile Pro Arg Phe Gly Val Lys Thr Glu Gln Glu Asp
245 250 255
Val Leu Ala Lys Glu Leu Glu Asp Val Asn Lys Trp Gly Leu His Val
260 265 270
Phe Arg Ile Ala Glu Leu Ser Gly Asn Arg Pro Leu Thr Val Ile Met
275 280 285
His Thr Ile Phe Gln Glu Arg Asp Leu Leu Lys Thr Phe Lys Ile Pro
290 295 300
Val Asp Thr Leu Ile Thr Tyr Leu Met Thr Leu Glu Asp His Tyr His
305 310 315 320
Ala Asp Val Ala Tyr His Asn Asn Ile His Ala Ala Asp Val Val Gln
325 330 335
Ser Thr His Val Leu Leu Ser Thr Pro Ala Leu Glu Ala Val Phe Thr
340 345 350
Asp Leu Glu Ile Leu Ala Ala Ile Phe Ala Ser Ala Ile His Asp Val
355 360 365
Asp His Pro Gly Val Ser Asn Gln Phe Leu Ile Asn Thr Asn Ser Glu
370 375 380
Leu Ala Leu Met Tyr Asn Asp Ser Ser Val Leu Glu Asn His His Leu
385 390 395 400
Ala Val Gly Phe Lys Leu Leu Gln Glu Glu Asn Cys Asp Ile Phe Gln
405 410 415

Asn	Leu	Thr	Lys	Lys	Gln	Arg	Gln	Ser	Leu	Arg	Lys	Met	Val	Ile	Asp	
			420					425					430			
Ile	Val	Leu	Ala	Thr	Asp	Met	Ser	Lys	His	Met	Asn	Leu	Leu	Ala	Asp	
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Leu	Lys	Thr	Met	Val	Glu	Thr	Lys	Lys	Val	Thr	Ser	Ser	Gly	Val	Leu	
	450					455					460					
Leu	Leu	Asp	Asn	Tyr	Ser	Asp	Arg	Ile	Gln	Val	Leu	Gln	Asn	Met	Val	
465				470						475					480	
His	Cys	Ala	Asp	Leu	Ser	Asn	Pro	Thr	Lys	Pro	Leu	Gln	Leu	Tyr	Arg	
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Gln	Trp	Thr	Asp	Arg	Ile	Met	Glu	Glu	Phe	Phe	Arg	Gln	Gly	Asp	Arg	
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Glu	Arg	Glu	Arg	Gly	Met	Glu	Ile	Ser	Pro	Met	Cys	Asp	Lys	His	Asn	
	515						520					525				
Ala	Ser	Val	Glu	Lys	Ser	Gln	Val	Gly	Phe	Ile	Asp	Tyr	Ile	Val	His	
	530					535					540					
Pro	Leu	Trp	Glu	Thr	Trp	Ala	Asp	Leu	Val	His	Pro	Asp	Ala	Gln	Asp	
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Ile	Leu	Asp	Thr	Leu	Glu	Asp	Asn	Arg	Glu	Trp	Tyr	Gln	Ser	Thr	Ile	
			565						570					575		
Pro	Gln	Ser	Pro	Ser	Pro	Ala	Pro	Asp	Asp	Pro	Glu	Glu	Gly	Arg	Gln	
		580						585					590			
Gly	Gln	Thr	Glu	Lys	Phe	Gln	Phe	Glu	Leu	Thr	Leu	Glu	Glu	Asp	Gly	
	595					600					605					
Glu	Ser	Asp	Thr	Glu	Lys	Asp	Ser	Gly	Ser	Gln	Val	Glu	Glu	Asp	Thr	
	610					615					620					
Ser	Cys	Ser	Asp	Ser	Lys	Thr	Leu	Cys	Thr	Gln	Asp	Ser	Glu	Ser	Thr	
625					630					635					640	
Glu	Ile	Pro	Leu	Asp	Glu	Gln	Val	Glu	Glu	Glu	Ala	Val	Gly	Glu	Glu	
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Thr

<210> 37
 <211> 2395
 <212> DNA
 <213> Homo sapiens

<400> 37

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cgtcatgttc	tcggccgggg	tgctggggaa	cctcatagca	ctggcgctgc	tggcgcgccg	300
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<210> 38

<211> 358

<212> PRT

<213> Homo sapiens

<400> 38

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Ser Ala Gly Val Leu Gly Asn Leu Ile Ala Leu Ala Leu Leu Ala Arg
 35          40          45
Arg Trp Arg Gly Asp Val Gly Cys Ser Ala Gly Arg Arg Ser Ser Leu
 50          55          60
Ser Leu Phe His Val Leu Val Thr Glu Leu Val Phe Thr Asp Leu Leu
 65          70          75          80
Gly Thr Cys Leu Ile Ser Pro Val Val Leu Ala Ser Tyr Ala Arg Asn
 85          90          95
Gln Thr Leu Val Ala Leu Ala Pro Glu Ser Arg Ala Cys Thr Tyr Phe
100          105          110
Ala Phe Ala Met Thr Phe Phe Ser Leu Ala Thr Met Leu Met Leu Phe
115          120          125
Ala Met Ala Leu Glu Arg Tyr Leu Ser Ile Gly His Pro Tyr Phe Tyr
130          135          140
Gln Arg Arg Val Ser Arg Ser Gly Gly Leu Ala Val Leu Pro Val Ile
145          150          155          160
Tyr Ala Val Ser Leu Leu Phe Cys Ser Leu Pro Leu Leu Asp Tyr Gly
165          170          175
Gln Tyr Val Gln Tyr Cys Pro Gly Thr Trp Cys Phe Ile Arg His Gly
180          185          190
Arg Thr Ala Tyr Leu Gln Leu Tyr Ala Thr Leu Leu Leu Leu Ile
195          200          205
Val Ser Val Leu Ala Cys Asn Phe Ser Val Ile Leu Asn Leu Ile Arg
210          215          220
Met His Arg Arg Ser Arg Arg Ser Arg Cys Gly Pro Ser Leu Gly Ser
225          230          235          240
Gly Arg Gly Gly Pro Gly Ala Arg Arg Arg Gly Glu Arg Val Ser Met
245          250          255
Ala Glu Glu Thr Asp His Leu Ile Leu Leu Ala Ile Met Thr Ile Thr
260          265          270

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Phe	Ala	Val	Cys	Ser	Leu	Pro	Phe	Thr	Ile	Phe	Ala	Tyr	Met	Asn	Glu
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Thr	Ser	Ser	Arg	Lys	Glu	Lys	Trp	Asp	Leu	Gln	Ala	Leu	Arg	Phe	Leu
	290					295					300				
Ser	Ile	Asn	Ser	Ile	Ile	Asp	Pro	Trp	Val	Phe	Ala	Ile	Leu	Arg	Pro
305					310					315					320
Pro	Val	Leu	Arg	Leu	Met	Arg	Ser	Val	Leu	Cys	Cys	Arg	Ile	Ser	Leu
				325					330					335	
Arg	Thr	Gln	Asp	Ala	Thr	Gln	Thr	Ser	Cys	Ser	Thr	Gln	Ser	Asp	Ala
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<210> 39
 <211> 2745
 <212> DNA
 <213> Homo sapiens

<400> 39

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<210> 40
<211> 391
<212> PRT
<213> Homo sapiens

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<400> 40
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20      25      30
Cys Lys Thr Ile Asp Met Glu Leu Val Lys Arg Lys Arg Ile Glu Ala
35      40      45
Ile Arg Gly Gln Ile Leu Ser Lys Leu Arg Leu Ala Ser Pro Pro Ser
50      55      60
Gln Gly Glu Val Pro Pro Gly Pro Leu Pro Glu Ala Val Leu Ala Leu
65      70      75      80
Tyr Asn Ser Thr Arg Asp Arg Val Ala Gly Glu Ser Ala Glu Pro Glu
85      90      95
Pro Glu Pro Glu Ala Asp Tyr Tyr Ala Lys Glu Val Thr Arg Val Leu
100     105     110
Met Val Glu Thr His Asn Glu Ile Tyr Asp Lys Phe Lys Gln Ser Thr
115     120     125
His Ser Ile Tyr Met Phe Phe Asn Thr Ser Glu Leu Arg Glu Ala Val
130     135     140
Pro Glu Pro Val Leu Leu Ser Arg Ala Glu Leu Arg Leu Leu Arg Arg
145     150     155     160
Leu Lys Leu Lys Val Glu Gln His Val Glu Leu Tyr Gln Lys Tyr Ser
165     170     175
Asn Asn Ser Trp Arg Tyr Leu Ser Asn Arg Leu Leu Ala Pro Ser Asp
180     185     190
Ser Pro Glu Trp Leu Ser Phe Asp Val Thr Gly Val Val Arg Gln Trp
195     200     205
Leu Ser Arg Gly Gly Glu Ile Glu Gly Phe Arg Leu Ser Ala His Cys
210     215     220
Ser Cys Asp Ser Arg Asp Asn Thr Leu Gln Val Asp Ile Asn Gly Phe
225     230     235     240
Thr Thr Gly Arg Arg Gly Asp Leu Ala Thr Ile His Gly Met Asn Arg
245     250     255
Pro Phe Leu Leu Leu Met Ala Thr Pro Leu Glu Arg Ala Gln His Leu
260     265     270
Gln Ser Ser Arg His Arg Arg Ala Leu Asp Thr Asn Tyr Cys Phe Ser
275     280     285
Ser Thr Glu Lys Asn Cys Cys Val Arg Gln Leu Tyr Ile Asp Phe Arg
290     295     300
Lys Asp Leu Gly Trp Lys Trp Ile His Glu Pro Lys Gly Tyr His Ala
305     310     315     320
Asn Phe Cys Leu Gly Pro Cys Pro Tyr Ile Trp Ser Leu Asp Thr Gln
325     330     335
Tyr Ser Lys Val Leu Ala Leu Tyr Asn Gln His Asn Pro Gly Ala Ser
340     345     350
Ala Ala Pro Cys Cys Val Pro Gln Ala Leu Glu Pro Leu Pro Ile Val
355     360     365

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Tyr	Tyr	Val	Gly	Arg	Lys	Pro	Lys	Val	Glu	Gln	Leu	Ser	Asn	Met	Ile
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Val	Arg	Ser	Cys	Lys	Cys	Ser									
385					390										